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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/249,312	02/12/1999	DAVID DI HUO	2925-248P	9794
30594	7590	11/30/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			ORGAD, EDAN	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/249,312		HUO ET AL.	
	Examiner		Art Unit	
	Edan Orgad		2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-34 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 9-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US Patent # 5,117,503) in view of Cheng et al (US Patent # 5,890,067).

Regarding claim 1, Olson teaches a method for adjusting antenna radiation for a wireless network or segment thereof, the method comprising the steps of: varying antenna radiation directions of a plurality of antennas throughout ranges of antenna radiation directions (col. 2, line 60- col. 3, line 27 & col. 5, lines 3-26); measuring signal parameters for the varied antenna radiation directions for a plurality of measurement locations (col. 5, lines 3-26).

However, Olson fails to specifically disclose determining a resultant antenna radiation direction within the ranges for each of the antennas in the wireless network or segment thereof in which to transmit to a plurality of subscribers based on the measured signal parameters to achieve desired performance criteria.

In related art, Chang teaches determining a resultant antenna radiation direction within the ranges for each of the antennas in the wireless network or segment thereof in which to transmit based on the measured signal parameters to achieve desired performance criteria (col. 3, lines 50-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Chang's determining means with Olson's antenna system in order to provide Olson with a larger traffic capacity handling.

Regarding claim 4, Olson teaches the measuring step comprises measuring signal strengths as the signal parameters at the measurement locations (col. 11, lines 41-54).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US Patent # 5,117,503) in view of Chang et al (US Patent # 5,890,067) and further in view of Keskitalo (US Patent # 5,966,679).

Regarding claim 2, Olson in view Chang fail to specifically disclose the resultant antenna radiation direction is defined as a two dimensional vector representing angle of azimuth from a corresponding antenna and a down-tilt angle from the corresponding antenna.

In related art, Keskitalo teaches a resultant antenna radiation direction is defined as a two dimensional vector representing angle of azimuth from a corresponding antenna and a down-tilt angle from the corresponding antenna (col. 16, lines 25-30, two dimension- vertical and horizontal).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Keskitalo with Olson's invention as modified by Chang, in order to provide Olson with more accurate measuring parameters and thus increase system capacity.

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Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US Patent # 5,117,503) in view of Chang et al (US Patent # 5,890,067) and further in view of Jolma Petri (WO 96 37969).

Regarding claim 3, Olson as modified by Chang teaches determining a resultant antenna radiation direction but fails to specifically disclose the resultant antenna radiation direction, is defined as including a central vector representing a peak gain of a main lobe of radiation, a first limit vector representing a first limit of radiation direction states, and a second limit vector representing a second limit of radiation direction states.

In related art Jolma teaches including a central vector representing a peak gain of a main lobe of radiation, a first limit vector representing a first limit of radiation direction states, and a second limit vector representing a second limit of radiation direction states (pg. 31, lines 6-18 & pg. 32, lines 17-22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include Jolma's central vector representing a peak gain of a main lobe of radiation, a first limit vector representing a first limit of radiation direction states, and a second limit vector representing a second limit of radiation direction states with Jone's invention in order to increase the efficiency of the usage of the pilot signal.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US Patent # 5,117,503) in view of Chang et al (US Patent # 5,890,067) and further in view of Avidor et al (EP 841826A).

Regarding claim 8, Olson as modified by Chang fail to specifically disclose organizing the measured signal strengths into a location measurement data structure corresponding to each measurement location wherein the determining step determines resultant antenna radiation direction s within the ranges of the antennas in the wireless network in which to transmit based upon data in the location measurement data structure such that a measurement characteristic of transmission from the antenna meets a desired performance criteria.

However, in the same field of endeavor, Avidor teaches organizing the measured signal strengths into a location measurement data structure corresponding to each measurement location (pg. 8, lines 40-43) wherein the determining step determines resultant antenna radiation direction s within the ranges of the antennas in the wireless network in which to transmit based upon data in the location measurement data structure such that a measurement characteristic of transmission from the antenna meets a desired performance criteria (pg. 9, lines 36-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include Avidor's organizing and determining means with Olson in order to collect less interference from other emitters and to generate less interference to other receivers.

Allowable Subject Matter

Claims 5-7 & 9-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Regarding claim 5-7 & 9-20, please see reasons for allowance in office action #10, dated 3/19/04.

Claims 21-34 are allowed.

Regarding claims 21 and 28, please see reasons for allowance in office action #10, dated 3/19/04.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edan Orgad whose telephone number is 571-272-7884. The examiner can normally be reached on 8:00AM to 5:30PM with every other Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EDAN ORGAD
PATENT EXAMINER/TELECOMM.

Ex. 11/14/9